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10/762,038	01/20/2004	Junichi Hayashi	CFA00043US	3926

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EXAMINER	
WANG, JIN CHENG	
ART UNIT	**PAPER NUMBER**
2672	

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/762,038	HAYASHI, JUNICHI	
	Examiner	Art Unit	
	Jin-Cheng Wang	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20,27,30 and 32-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20,27,30 and 32-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/20/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's submission filed on 10/24/2005 has been entered. Claims 1-2, 7-8, 12-13, 16-18, 27 have been amended. Claims 41-48 have been newly added. Claims 1-20 and 27, 30, and 32-48 are pending in the present application.

Response to Arguments

Applicant's arguments filed October 24, 2005 have been fully considered but are moot in view of the new ground(s) of rejection set forth in the this Office Action.

As addressed below, the Claim 1 is rejected as being anticipated by Matsunoshita US 2003/0179412 A1 (hereinafter Matsunoshita).

Applicant argues that, "the Matsunoshita reference does not teach or suggest that such information is attached to the latent image area." Applicant's statement is incorrect because Matsunoshita clearly shows that additional information being attached to the latent image area. For example, Matsunoshita discloses in Figs. 5(A)-6(C) the latent image area and the additional information such as the copy inhibition information (Paragraph 0062) is attached to the latent image area wherein the relatively small dots within the latent image characters cannot be faithfully copied by the copying machine in which the character image is snow white not containing characters and graphics (Paragraph 0101) and the large dots outside the latent image are faithfully reproduced. See paragraph 0110 that the characters embedded as a latent image comes forth into view when the document image is copied. See also Paragraph 0160 that the background image is located in a predetermined location of the document image.

Although the characters "COPY" in Fig. 6(A) is **not legible** (Paragraph 0099), the copy as shown in Figs. 6(B) and 6(C) is legible with the characters of "COPY". Thus, the attached information is capable of distinguishing the original document from a copy because the copy of the original image contains "COPY" as evidenced in Figs. 6(B) and 6(C). This allows the copy of the original document to be distinguished from the original document. The user is also capable of printing out the original document without attaching the additional information, i.e., the background image to the original document when the user is permitted to print the original document. Moreover, Matsunoshita discloses the copying of the original document is either allowed or prohibited, and if allowed, a copy inhibition mark is attached with the original document in the latent image area together with the background image. See Paragraph 0193-0194 wherein the document data may be printed without the pattern images or without the copy inhibition information. In Paragraph 0200, the copy inhibition code is used to permit **the copying of the printed document** wherein the printed document serves as "an original document". Paragraph 0210-0211 illustrate that the document is printed as a copy with the pattern images shown.

Matsunoshita discloses in Paragraph 0110 that this psychological deterrent acts on the illicit copying act and one can **distinguish between the original and the copied sheet by the emerging image**. *Therefore, Matsunoshita clearly discloses the additional information is capable of distinguishing an original image from a copy as the additional information is attached to the latent image area to distinguish an original image from a copy.* In the image of Fig. 6(B), the copied image is clearly different from the original image-the confidential document.

Applicant stated that, "if the image is copied, the background image area remains but the latent image area disappears". However, applicant's argument is irrelevant to the claim 1 because such language in the argument is nowhere in the claim 1. Applicant further argues that "this information can be extracted from the original..., but not from a copy..." which is irrelevant to the claim 1 because the language in the argument cannot not found as a claim limitation in the claim 1. The claim 1 is broadly construed without the specific arguments set forth in applicant's arguments.

The claim 1 however broadly recites receiving additional information and attaching the additional information to the latent image area. Clearly, Matsunoshita fulfills the claim limitations set forth in the claim 1.

Specification

The disclosure is objected to because of the following informalities: In line 6 of the claim 1, "larger from" should be "larger than." In line 6 of the claim 7, "larger from" should be "larger than." In line 6 of the claim 12, "larger from" should be "larger than." In line 6 of the claim 16, "larger from" should be "larger than." Appropriate correction is required.

Claim Objections

Claim 1 is objected to because of the following informalities: In line 6 of the claim 1, "larger from" should be "larger than" Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsunoshita US 2003/0179412 A1 (hereinafter Matsunoshita).

Re Claims 1, 7, 12, 16:

Matsunoshita teaches an image-processing apparatus which expresses images as bit map data having a latent image area and a background area in order to discourage illegal copying of images, the image-processing apparatus comprising:

An image generator which generates a new image by expressing the latent image area (*It is not clear what applicant means by the latent image in view of the prior art of record because the latent image may be the latent image of the prior art embedded in the background image or the latent image may be a part of the document image of the prior art; in this Office Action, both situations are addressed*) with dots of a first dot size and the background area with dots of a second dot size which is larger than the first dot size (*e.g., the relatively large dots outside the latent image are faithfully reproduced,* ***but relatively small dots within the latent image characters cannot be faithfully copied by the copying machine****; moreover, the document image and the background image containing a number of pattern images may have dots of different sizes; Figs. 3-4, 6(A)-6(B), Paragraph 0005, 0016, 0021, 0027,* ***0066-0069****, 0100, 0101; the*

background image is generated having a size smaller than the document image; Paragraph 0160);

An information-attaching unit which receives additional information (*e.g., the received additional information may be the PDL information of Paragraph 0075 or may be either from the embedded code information in the background image or the additional information retrieved from the internal memory, e.g., the machine number, user ID and password stored in the internal ROM; Paragraphs 0125-0127, or the contents of the condition information with the information registered in the internal memory; Paragraph 0157; based on the additional information received from the internal memory, the control part 32 analyzes the condition information represented by the condition code to* ***permit or inhibit copying*** *of the image; and by the template matching technique of Paragraph 0133 and the judgment is made whether the document image is a copy inhibition document of Paragraph 0149 based on the embedded information in the background image. Permit of copying means the permit of copying of the document image which is an original image to be copied without copy inhibition wherein the copying of the document image is an original image*) capable of distinguishing an original image from a copy (*e.g., Paragraph 0162, 0165; 0066-0069; Matsunoshita teaches additional information being attached to the latent image area. For example, Matsunoshita discloses in Figs. 5(A)-6(C) the latent image area and the additional information such as the copy inhibition information (Paragraph 0062) is attached to the latent image area wherein the relatively small dots within the latent image characters cannot be faithfully copied by the copying machine (Paragraph 0101) and the large dots outside the latent image are faithfully reproduced. The original document image may be printed. The original document image may be printed with the*

characters "COPY" and the copy in shown in Figs. 6(B) and 6(C) wherein "COPY" is legible. The copy inhibition information is attached to the latent image area to distinguish from an original image. See Paragraph 0193-0194 wherein the document data may be printed without the pattern images or without the copy inhibition information. In Paragraph 0200, the copy inhibition code is used to permit ***the copying of the printed document*** *wherein the printed document serves as "an original document". However, Paragraph 0210-0211 illustrate that the document is printed with the pattern images shown*);

Wherein the information-attaching unit then attaches the additional information to at least the latent image area of the image generated by the image generator (*e.g., the additional information such as the embedded code information such as the contents of the condition information, the copy inhibition code are reconstructed as a background image and thereby being attached to the background image wherein the background image includes a latent image. Moreover, the background image including the additional information is also attached to the document image in compositing; see Paragraph 0016, 0021, 0027, 0051, 0054, 0066, 0072, 0081, 0083, 0088,0093, 0099-**0106**, 0109, 0117, 0124-0127, 0132-0133, 0145-0147, 0155-0165, 0198-0204, 0209-0211; See paragraph 0066-0069; Matsunoshita teaches additional information being attached to the latent image area. For example, Matsunoshita discloses in Figs. 5(A)-6(C) the latent image area and the additional information such as the copy inhibition information (Paragraph 0062) is attached to the latent image area wherein the relatively small dots within the latent image characters cannot be faithfully copied by the copying machine (Paragraph 0101) and the large dots outside the latent image are faithfully reproduced. The copy as shown in Figs. 6(B) and 6(C) is legible with characters "COPY". Therefore, the copy inhibition*

information is attached to the latent image area to distinguish an original image from a copy. In the images in Figs. 6(B) and 6(C), "COPY" can be seen by the human eye).

In other words, Matsunoshita clearly shows that additional information being attached to the latent image area. For example, Matsunoshita discloses in Figs. 5(A)-6(C) the latent image area and the additional information such as the copy inhibition information (Paragraph 0062) is attached to the latent image area wherein the relatively small dots within the latent image characters cannot be faithfully copied by the copying machine in which the character image is snow white not containing characters and graphics (Paragraph 0101) and the large dots outside the latent image are faithfully reproduced. See paragraph 0110 that the characters embedded as a latent image comes forth into view when the document image is copied. See also Paragraph 0160 that the background image is located in a predetermined location of the document image.

Although the characters "COPY" in Fig. 6(A) is **not legible** (Paragraph 0099), the copy as shown in Figs. 6(B) and 6(C) is legible with the characters of "COPY". Thus, the attached information is capable of distinguishing the original document from a copy because the copy of the original image contains "COPY" as evidenced in Figs. 6(B) and 6(C). This allows the copy of the original document to be distinguished from the original document. The user is also capable of printing out the original document without attaching the additional information, i.e., the background image to the original document when the user is permitted to print the original document. Moreover, Matsunoshita discloses the copying of the original document is either allowed or prohibited, and if allowed, a copy inhibition mark is attached with the original document in the latent image area together with the background image. See Paragraph 0193-0194 wherein the document data may be printed without the pattern images or without the copy

inhibition information. In Paragraph 0200, the copy inhibition code is used to permit **the copying of the printed document** wherein the printed document serves as "an original document". Paragraph 0210-0211 illustrate that the document is printed as a copy with the pattern images shown.

Matsunoshita discloses in Paragraph 0110 that this psychological deterrent acts on the illicit copying act and one can **distinguish between the original and the copied sheet by the emerging image**. *Therefore, Matsunoshita clearly discloses the additional information is capable of distinguishing an original image from a copy as the additional information is attached to the latent image area to distinguish an original image from a copy.* In the image of Fig. 6(B), the copied image is clearly different from the original image-the confidential document.

Re Claims 2, 8, 13:

Matsunoshita further discloses the relatively large dots outside the latent image and the relatively small dots within the latent image characters and the background image is generated having a size smaller than the document image (Paragraph 0066-0069; Paragraph 0101, 0109, 0160).

Re Claims 3 and 14:

Matsunoshita further discloses each of the dots includes two or more pixels (Paragraph 0068-0069, 0089).

Re Claims 4 and 9:

Matsunoshita further discloses controlling the position of each of the dots included in the latent image area in accordance with a bit value at the corresponding bit position in the additional information (*Paragraph 0068-0069, 0089; specifically, one pixel of the latent image character image is selected to be substantially equal in size to one pattern image and black pixels of the latent image may be arrayed in the size units of the pattern image corresponding to the copy inhibition information and condition information. Accordingly, when embedding the latent image character in the background image, each black pixel of the latent image character is embedded in a size unit or an array unit of the pattern image and thereby the dot position in the latent image may be arrayed according to the size units of the pattern image; controlling the size of dots in the latent image also controls the position of dots*).

Re Claims 5 and 10:

Matsunoshita further discloses controlling the size of each of the dots included in the latent image area in accordance with a bit value at the corresponding bit position in the additional information (*Paragraph 0068-0069, 0089; specifically, one pixel of the latent image character image is selected to be substantially equal in size to one pattern image and black pixels of the latent image may be arrayed in the size units of the pattern image corresponding to the copy inhibition information and condition information. Accordingly, when embedding the latent image character in the background image, each black pixel of the latent image character is embedded in a size unit or an array unit of the pattern image and thereby the dot position in the latent image may be arrayed according to the size units of the pattern image*).

Re Claims 6, 11 and 15:

Matsunoshita further discloses a composite image being generated by the image generator (*e.g., the composite image generating part 50 of Paragraph 0073*).

Re Claims 17-20:

Matsunoshita further discloses a program and the computer-readable storage medium to execute the image-processing method (Figs. 4, 8, 1012, 13, 18(A)-18(B) and 19 and Page 17).

Claims 27, 30, 32-34 and 41-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Lofgren U.S. Patent No. 6,664,976 (hereinafter Lofgren).

Re Claims 27, 44-46, 47, and 48:

Lofgren teaches a method for determining whether an image is an original or copy, the method comprising:

A receiving step of receiving the image having a first region that is reproducible when it is copied and a second region that is not reproducible when copied (*Lofgren discloses in column 4, lines 15-25 that an image is divided into tiles or sections with each tile or section being embedded with the digital watermark including the fragile watermark. Lofgren discloses fragile watermark being embedded into a tile of an image which is not reproducible when copied and the rest of the image is reproducible; see column 11, lines 24-50.* ***The tile in the image having the fragile watermark is not reproducible when copied because it lost the fragile watermark***);

An extracting step of extracting embedded information that indicates whether the image is a copy or an original (*Lofgren discloses computing the hash for an image which determines*

whether the image is an original image and a derivative (a copy of the original) which the hash uniquely identifies an image being the original or derivatives; see column 7, lines 16-67 and column 8, lines 1-37); and

A determining step of determining whether the image is a copy or an original based on a result of the extracting step (*Lofgren discloses in column 8, lines 1-28 verifying whether a particular image is an original image using the image hash associated with metadata indicating that "this image is a derivative" or "this image is an original or parent"*).

Re Claim 30:

Lofgren discloses the embedded information being attached to the first and the second region (as indicated in above, the fragile watermark being attached to a tile as a second region and the second watermark being attached to the other tile in the image; see column 11, lines 24-50).

Re Claim 32:

Lofgren further discloses random bit string (column 6, lines 10-16).

Claim 33:

Lofgren further discloses a digital signature of textural information (column 7, lines 1-15).

Claim 34:

Lofgren further discloses expressing the first region with a plurality of dots of a first size (a first watermark representing the plurality of dots of a first size and a second watermark representing the plurality of dots of a second size because the image blocks with high or low frequency components themselves also represent dots of different sizes; see column 7, lines 1-25).

Re Claims 41 and 43:

Lofgren discloses in column 8, lines 1-22 extracting the hashing from the image to see if the image is an original or a derivative wherein the derivative comprises a copy of the image.

Re Claim 42:

Lofgren discloses in column 8 extracting the hash from the image to see if the image is an original or a derivative and if the image has no particular hash related to the parent image, the image is a copy because the hash for the parent image cannot be extracted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 35-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lofgren U.S. Patent No. 6,664,976 (hereinafter Lofgren) in view of Matsunoshita US 2003/0179412 A1 (hereinafter Matsunoshita).

Re Claims 35-40:.

Lofgren does not explicitly disclose the claim limitations set forth in the claims 35-40. However, Matunoshita further discloses attaching the embedded information based on a displacement of the plurality of dots in the first region or second region and based on first or second predetermined rules (e.g., data trains or bit trains are developed according to predetermined rules with the displacement being the periphery of the condition code array; see for example, Page 7-8). Taking the combined teaching of Lofgren and Matunoshita, it would have been obvious to have attached the embedded information of Matunoshita as watermark of Lofgren so that the watermark has the desired property as recited in Matunoshita. One of the ordinary skill in the art would have been motivated to do so to include the embedded information into the image of Lofgren according to the predetermined rules to link or distinguish the original with the derivatives (Lofgren column 8, lines 1-22).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw

Ryan Yang, P.E.